



Fig. 2

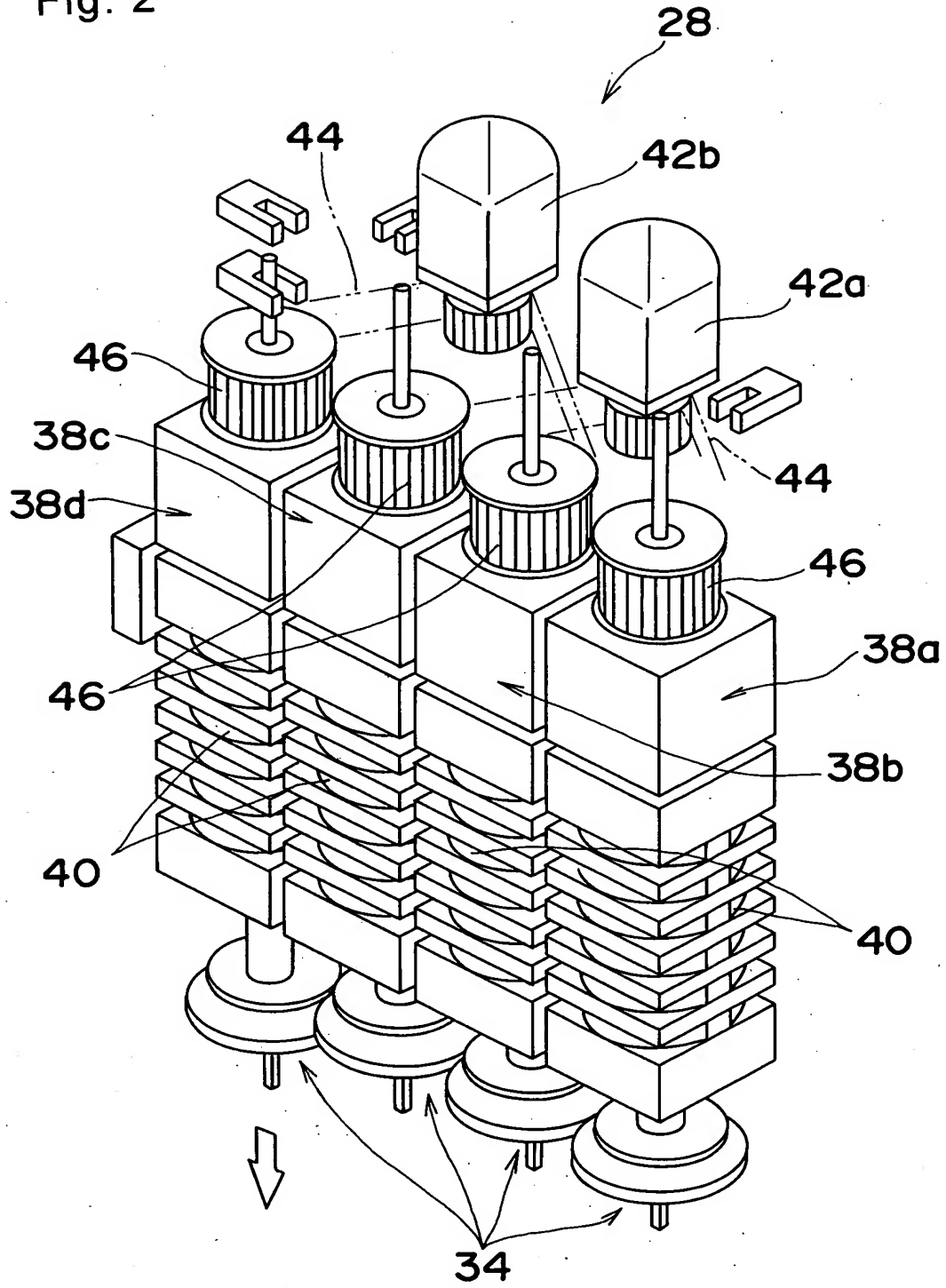
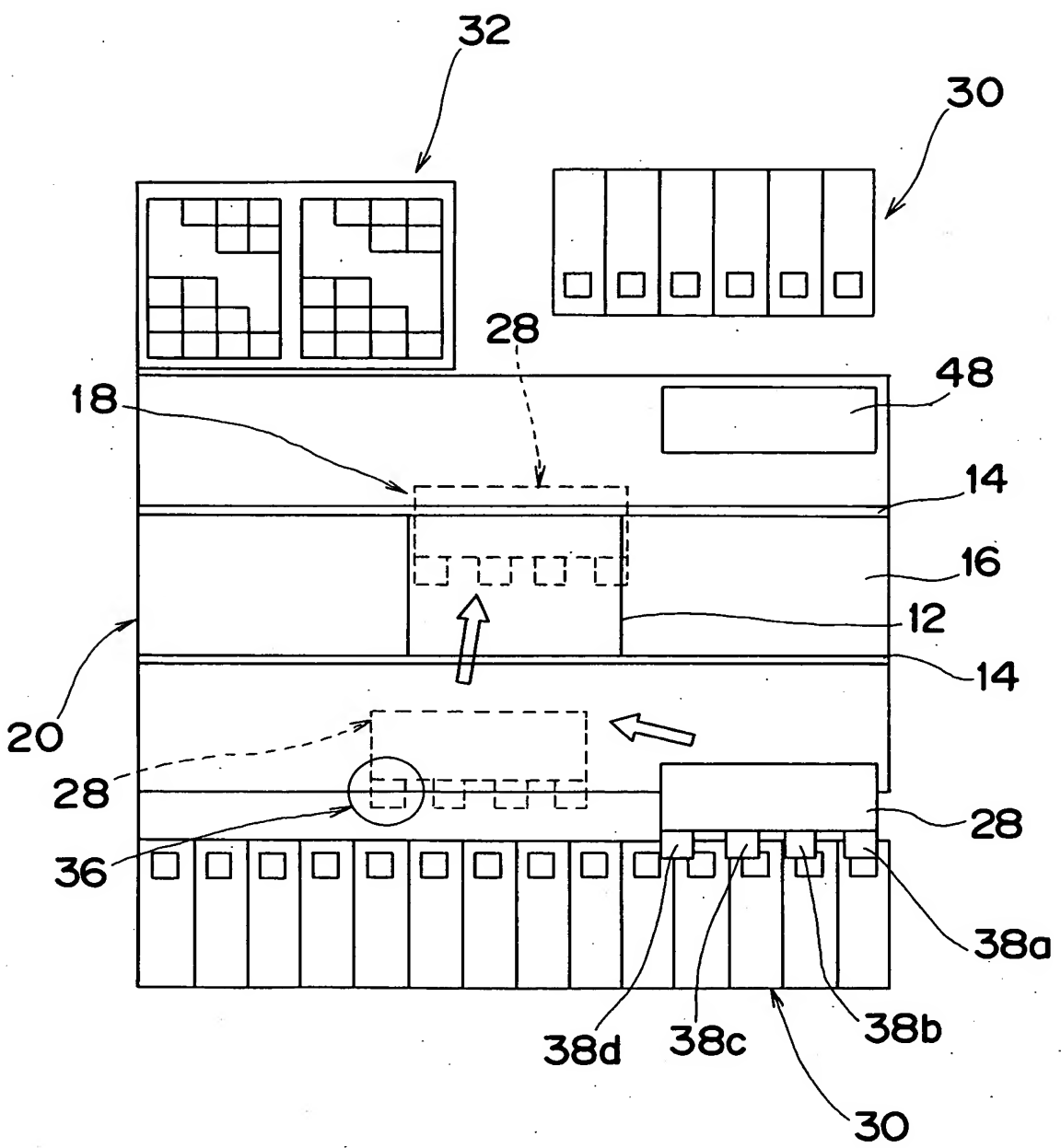


Fig. 3



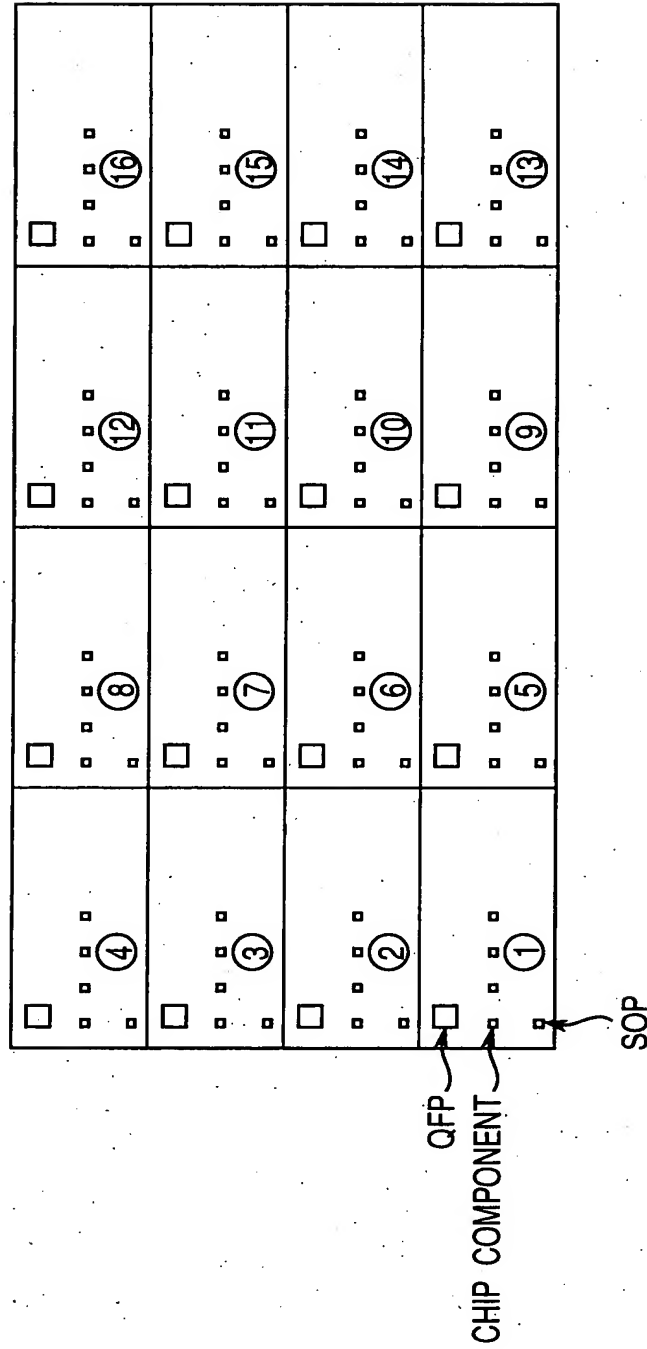


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**Fig.5****TASK REPEAT METHOD**

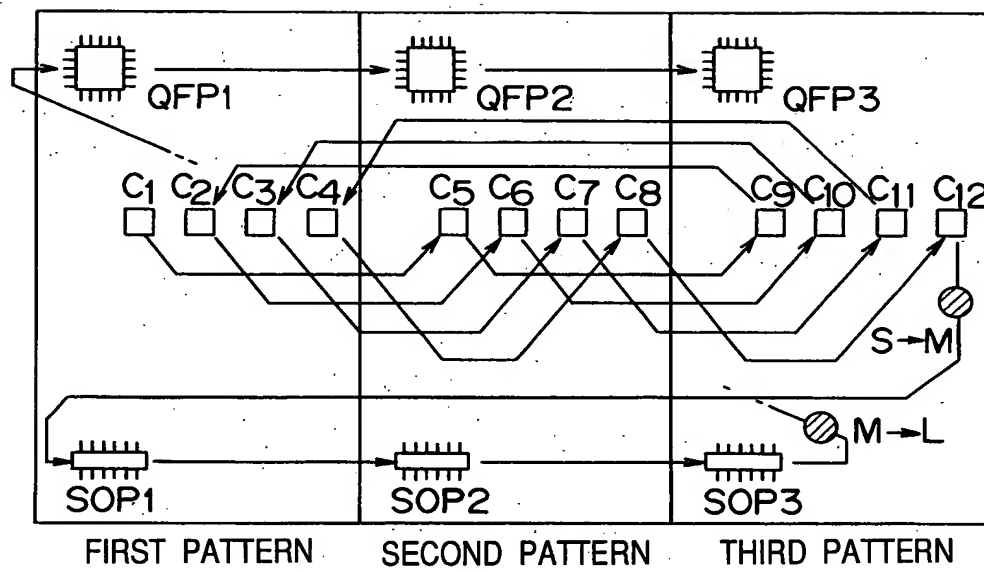
	SUB-BOARD	COMPONENT	PLACEMENT HEAD NO.	SUCTION NOZZLE
1	1	C1	1	S
2	1	C2	2	S
3	1	C3	3	S
4	1	C4	4	S
5	2	C5	1	S
6	2	C6	2	S
7	2	C7	3	S
8	2	C8	4	S
9	3	C9	1	S
10	3	C10	2	S
11	3	C11	3	S
12	3	C12	4	S
13	1	SOP1	1	M
14		—	2	—
15		—	3	—
16		—	4	—
17	2	SOP2	1	M
18		—	2	—
19		—	3	—
20		—	4	—
21	3	SOP3	1	M
22		—	2	—
23		—	3	—
24		—	4	—
25	1	QFP1	1	L
26		—	2	—
27		—	3	—
28		—	4	—
29	2	QFP2	1	L
30		—	2	—
31		—	3	—
32		—	4	—
33	3	QFP3	1	L
34		—	2	—
35		—	3	—
36		—	4	—

Fig.6



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Fig.7



⊘ NOZZLE CHANGE

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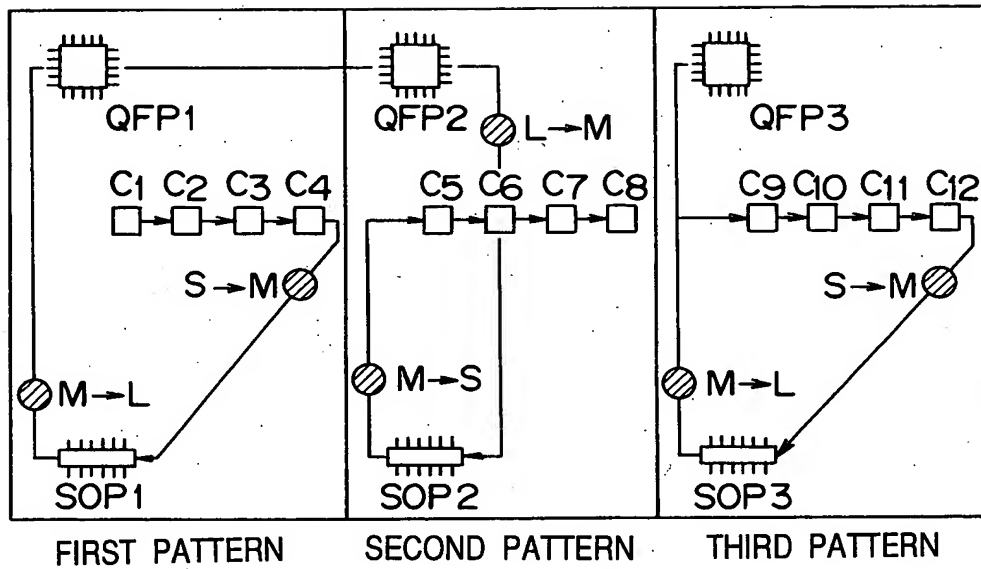
**Fig.8****IMPROVED STEP REPEAT METHOD**

	SUB-BOARD	COMPONENT	PLACEMENT HEAD NO.	SUCTION NOZZLE
1	1	C1	1	S
2	2	C5	2	S
3	3	C9	3	S
4		—	4	—
5	1	C2	1	S
6	2	C6	2	S
7	3	C10	3	S
8		—	4	—
9	1	C3	1	S
10	2	C7	2	S
11	3	C11	3	S
12		—	4	—
13	1	C4	1	S
14	2	C8	2	S
15	3	C12	3	S
16		—	4	—
17	1	SOP1	1	M
18		—	2	—
19		—	3	—
20		—	4	—
21	2	SOP2	1	M
22		—	2	—
23		—	3	—
24		—	4	—
25	3	SOP3	1	M
26		—	2	—
27		—	3	—
28		—	4	—
29	1	QFP1	1	L
30		—	2	—
31		—	3	—
32		—	4	—
33	2	QFP2	1	L
34		—	2	—
35		—	3	—
36		—	4	—
37	3	QFP3	1	L
38		—	2	—
39		—	3	—
40		—	4	—



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Fig.9



⊙ NOZZLE CHANGE

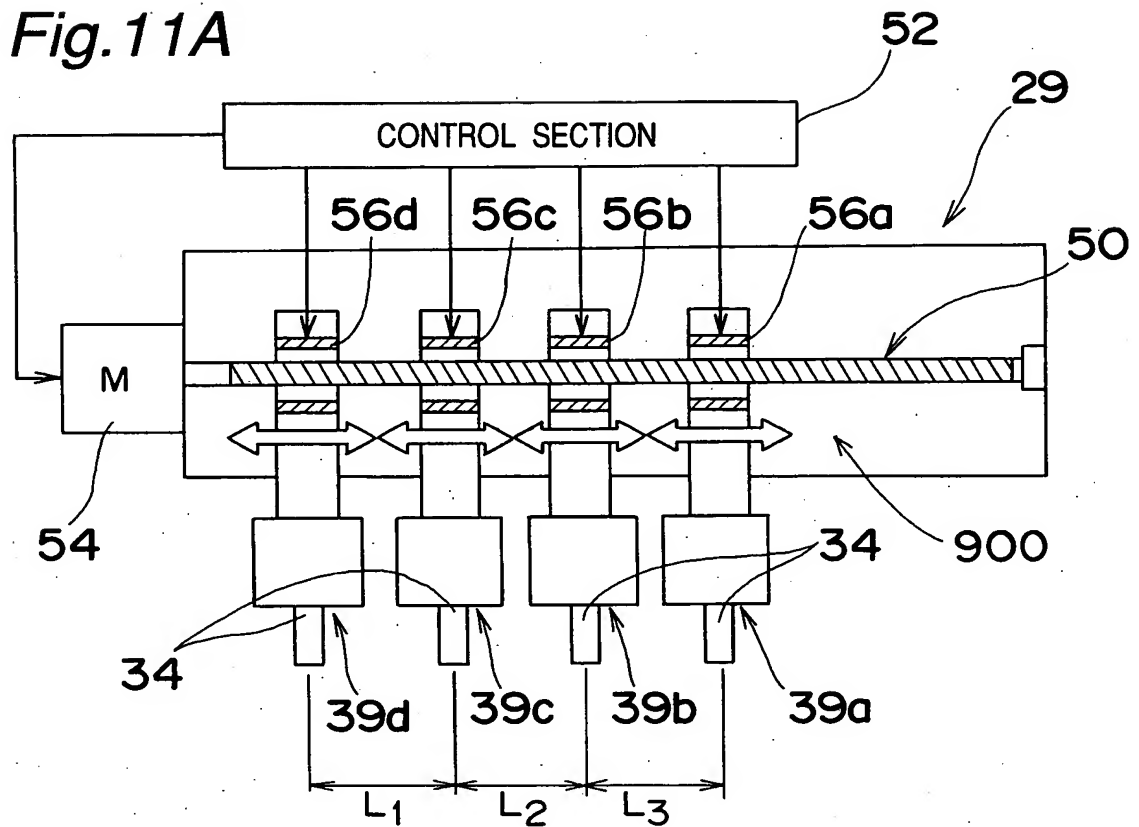
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**Fig. 10**

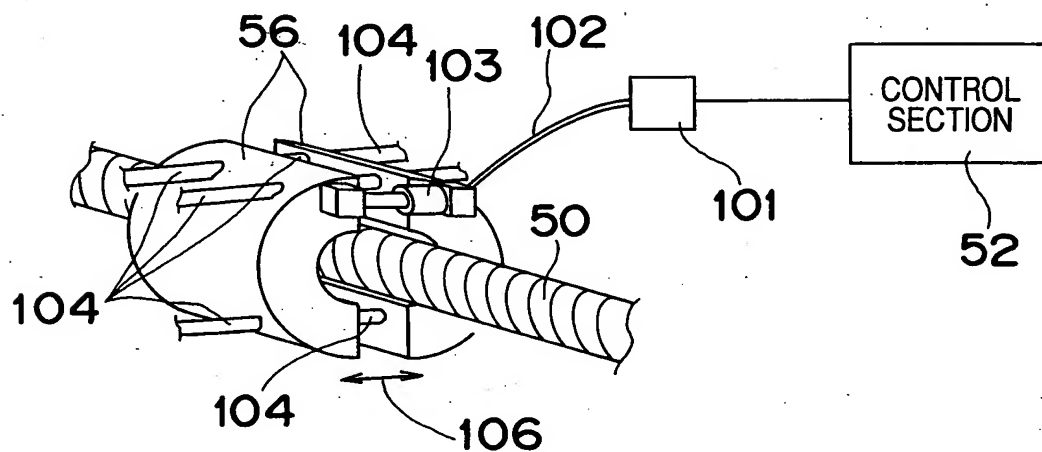
## REVERSAL METHOD

	SUB-BOARD	COMPONENT	PLACEMENT HEAD NO.	SUCTION NOZZLE
1	1	C1	1	S
2	1	C2	2	S
3	1	C3	3	S
4	1	C4	4	S
5	1	SOP1	1	M
6		—	2	—
7		—	3	—
8		—	4	—
9	1	QFP1	1	L
10		—	2	—
11		—	3	—
12		—	4	—
13	1	QFP2	1	L
14		—	2	—
15		—	3	—
16		—	4	—
17	2	SOP2	1	M
18		—	2	—
19		—	3	—
20		—	4	—
21	2	C5	1	S
22	2	C6	2	S
23	2	C7	3	S
24	2	C8	4	S
25	3	C9	1	S
26	3	C10	2	S
27	3	C11	3	S
28	3	C12	4	S
29	3	SOP3	1	M
30		—	2	—
31		—	3	—
32		—	4	—
33	3	QFP3	1	L
34		—	2	—
35		—	3	—
36		—	4	—

**Fig. 11A**

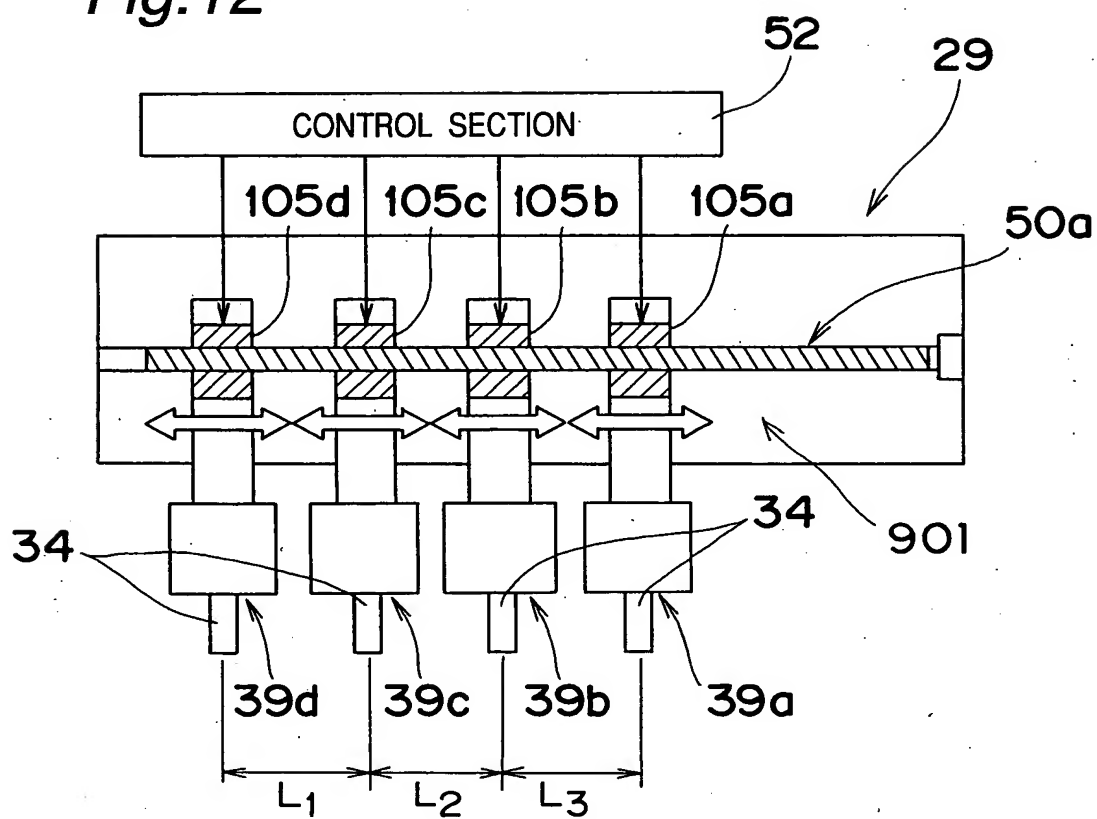


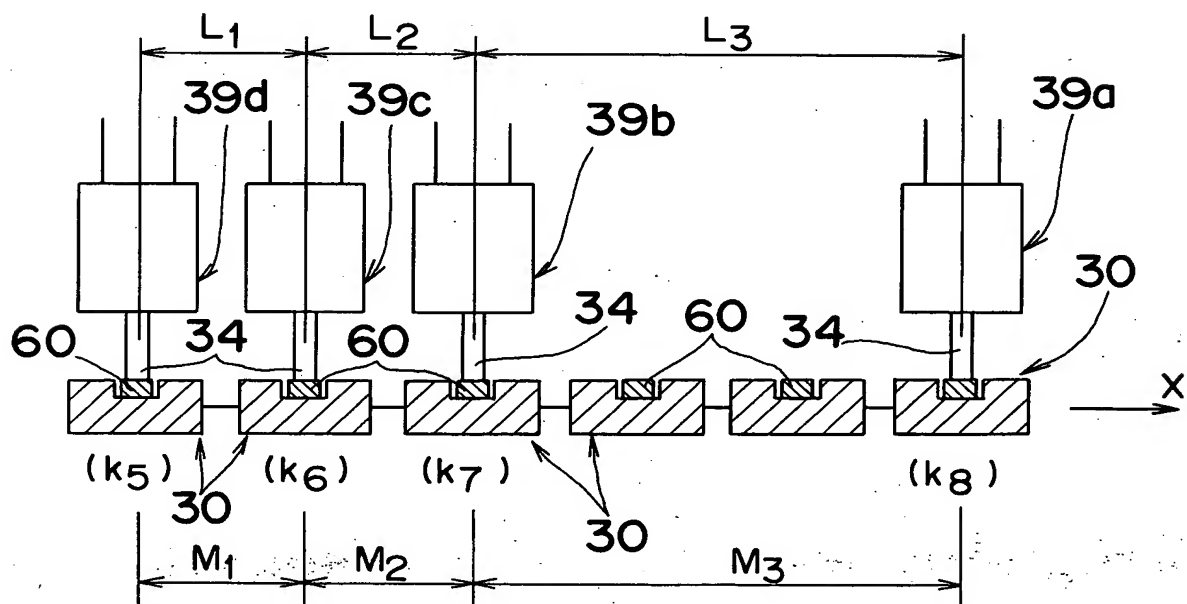
**Fig. 11B**



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Fig.12





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Fig. 14A

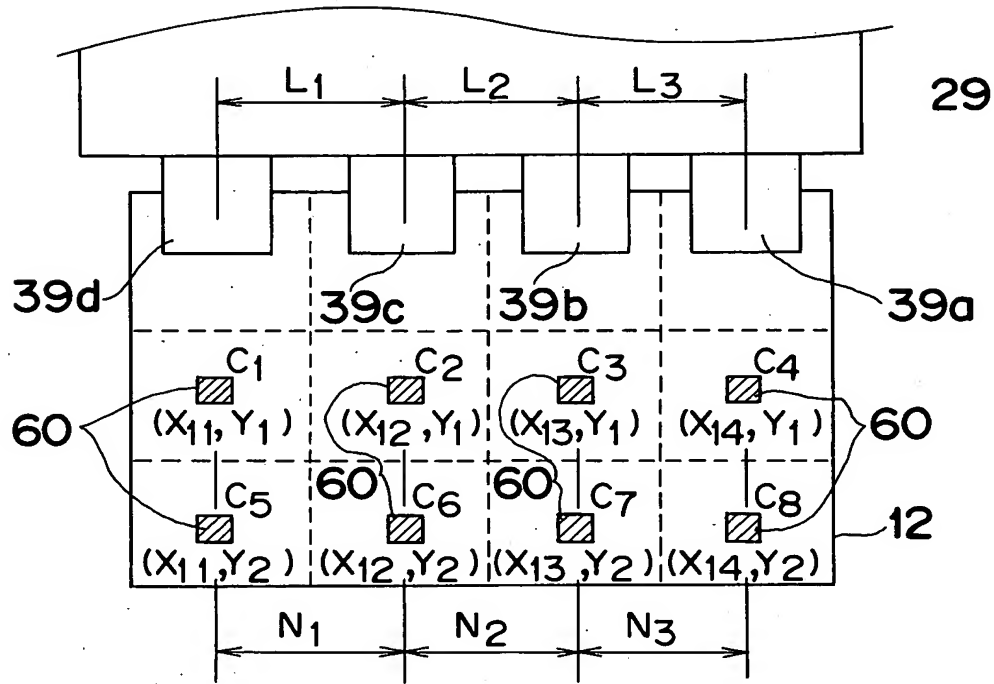


Fig. 14B

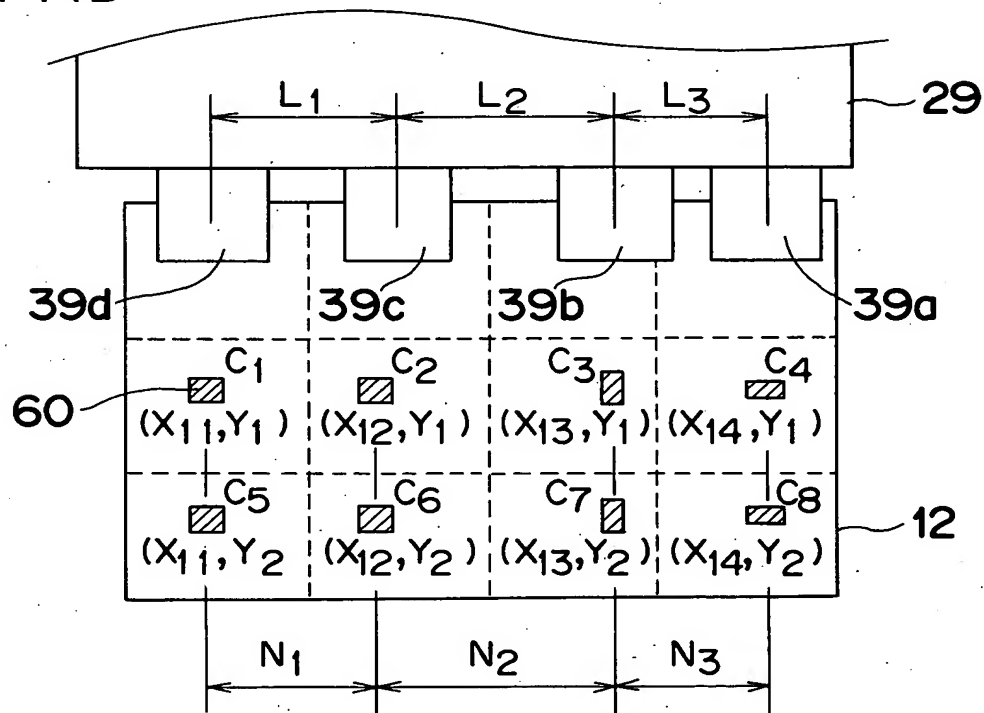
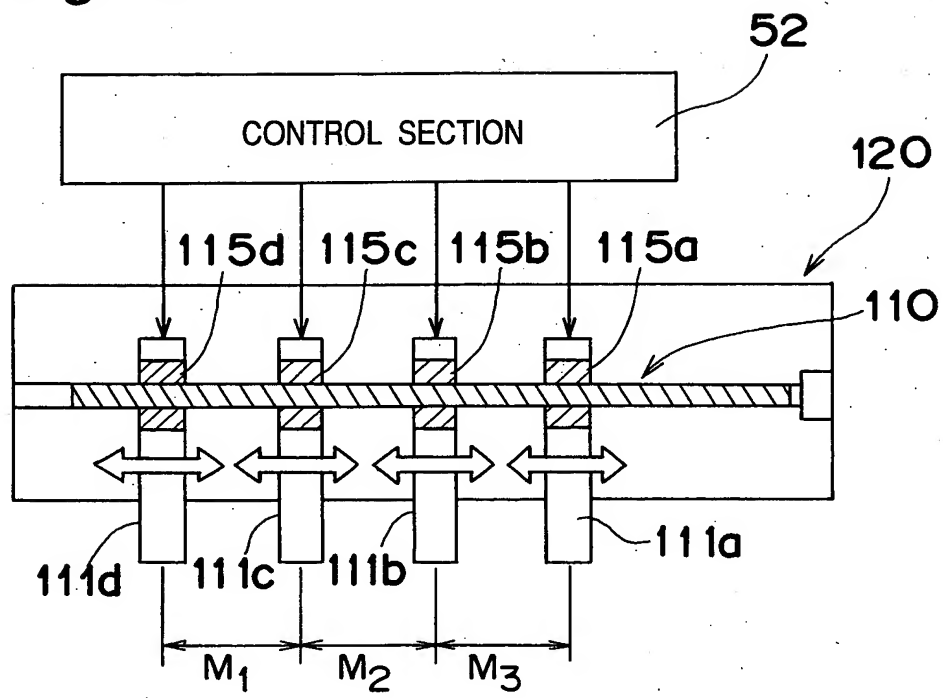


Fig.15

STEP No.	COMPONENT	FEED X	FEED Y	PLACEMENT X	PLACEMENT Y	PLACEMENT HEAD NO.
1	C1	K <sub>1</sub>	0	X <sub>11</sub>	Y <sub>1</sub>	39d
2	C2	K <sub>2</sub>	0	X <sub>12</sub>	Y <sub>1</sub>	39c
3	C3	K <sub>3</sub>	0	X <sub>13</sub>	Y <sub>1</sub>	39b
4	C4	K <sub>4</sub>	0	X <sub>14</sub>	Y <sub>1</sub>	39a
5	C5	K <sub>5</sub>	0	X <sub>11</sub>	Y <sub>2</sub>	39d
6	C6	K <sub>6</sub>	0	X <sub>12</sub>	Y <sub>2</sub>	39c
7	C7	K <sub>7</sub>	0	X <sub>13</sub>	Y <sub>2</sub>	39b
8	C8	K <sub>8</sub>	0	X <sub>14</sub>	Y <sub>2</sub>	39a

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Fig. 16





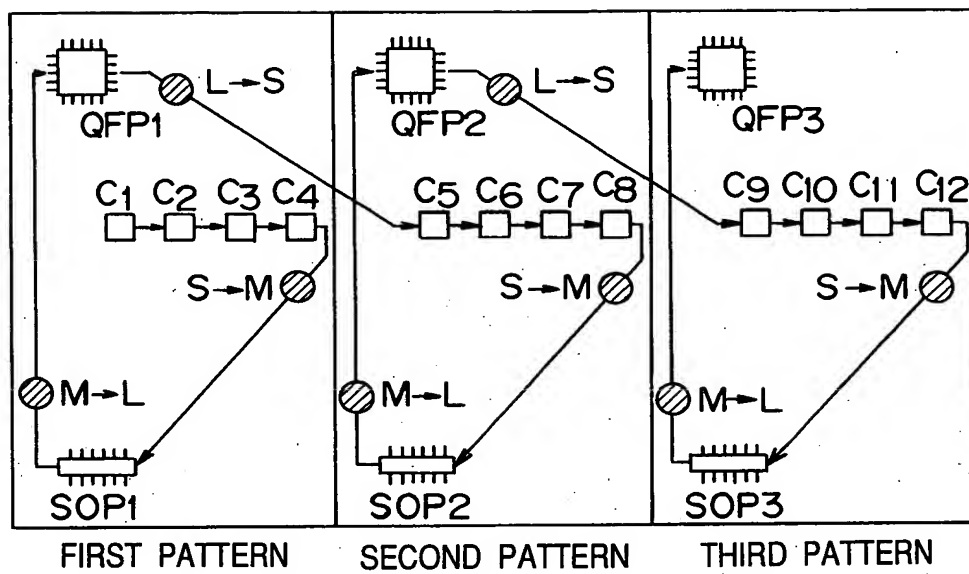
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*Fig.17*

## STEP REPEAT METHOD

	SUB-BOARD	COMPONENT	PLACEMENT HEAD NO.	SUCTION NOZZLE
1	1	C1	1	S
2		—	2	—
3		—	3	—
4		—	4	—
5	2	C5	1	S
6		—	2	—
7		—	3	—
8		—	4	—
9	3	C9	1	S
10		—	2	—
11		—	3	—
12		—	4	—
13	1	C2	1	S
14		—	2	—
15		—	3	—
16		—	4	—
17	2	C6	1	S
18		—	2	—
19		—	3	—
20		—	4	—
21	3	C10	1	S
22		—	2	—
23		—	3	—
24		—	4	—
45	3	C12	1	S
46		—	2	—
47		—	3	—
48		—	4	—
49	1	SOP1	1	M
50		—	2	—
51		—	3	—
52		—	4	—
53	2	SOP2	1	M
54		—	2	—
55		—	3	—
56		—	4	—
57				

Fig.18

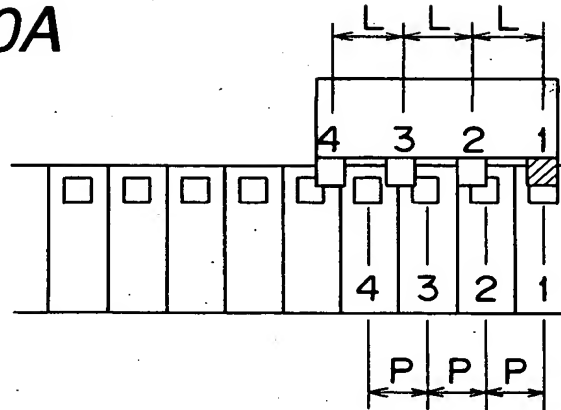


**Fig.19****PATTERN REPEAT METHOD**

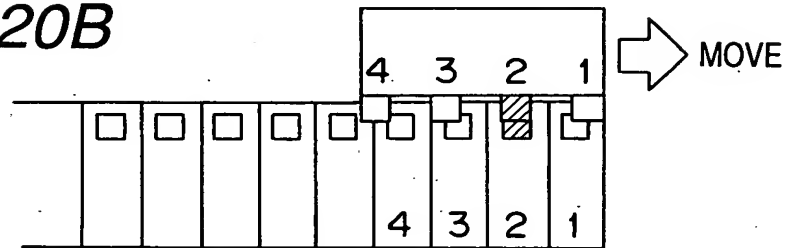
	SUB-BOARD	COMPONENT	PLACEMENT HEAD NO.	SUCTION NOZZLE
1	1	C1	1	S
2	1	C2	2	S
3	1	C3	3	S
4	1	C4	4	S
5	1	SOP1	1	M
6		—	2	—
7		—	3	—
8		—	4	—
9	1	QFP1	1	L
10		—	2	—
11		—	3	—
12		—	4	—
13	2	C5	1	S
14	2	C6	2	S
15	2	C7	3	S
16	2	C8	4	S
17	2	SOP2	1	M
18		—	2	—
19		—	3	—
20		—	4	—
21	2	QFP2	1	L
22		—	2	—
23		—	3	—
24		—	4	—
25	3	C9	1	S
26	3	C10	2	S
27	3	C11	3	S
28	3	C12	4	S
29	3	SOP3	1	M
30		—	2	—
31		—	3	—
32		—	4	—
33	3	QFP3	1	L
34		—	2	—
35		—	3	—
36		—	4	—

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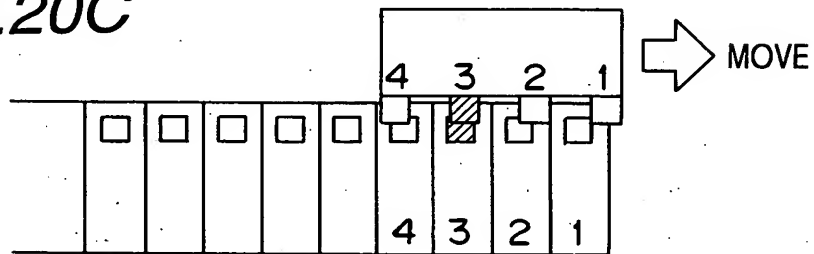
*Fig.20A*



*Fig.20B*



*Fig.20C*



*Fig.20D*

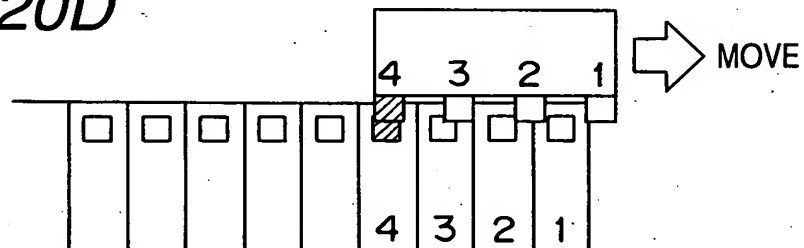


Fig.21

